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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,901	08/21/2003	Seung-Chul Park	1293.1959	6424

21171 7590 09/07/2005

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EXAMINER

FIGUEROA, NATALIA

ART UNIT	PAPER NUMBER
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2651

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/644,901	Applicant(s) PARK ET AL.	
	Examiner Natalia Figueroa	Art Unit 2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-10, and 30 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 11, 14-18, 23, 26 and 29 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 5, 6, 12, 13, 19-22, 24, 25, 27 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08/01/03, 06/09/04, 01/28/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 21 August 2003 (08/21/2003) is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.
2. The information disclosure statement (IDS) submitted on 29 June 2004 (06/29/2004) is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.
3. The information disclosure statement (IDS) submitted on 28 January 2005 (01/28/2005) is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 29 is rejected under 35 U.S.C. 102(e) as being anticipated by Chu et al (USPN 6,791,778), hereinafter Chu.

RE claim 29, Chu discloses a method, comprising determining whether an abnormality occurs in servo information written in a track of a disc, at a predetermined distance from a skew zero track (abstract, and col. 2, line 59-col. 2, line 4); if the abnormality is discovered, rewriting

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the servo information on the disc (col. 4, lines 45-54); and if the abnormality is not discovered, track-defect-processing tracks within the predetermined distance from the skew zero track (col. 4, lines 56-61).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 4, 11, 14-18, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miles (USPN 6,714,369) in view of Chu.

RE claim 1, Miles discloses a method to write servo information on a disc in a disc drive, the method comprising centering on a track of the disc having skew '0' (abstract, fig. 4, and col. 7, line 48), sequentially writing servo information toward the track having skew '0' from an outer surface in an outer region (fig. 4, and col. 8, lines 40-45), and sequentially writing the servo information toward the track having skew '0' from an inner surface in an inner region (fig. 4, and

col. 8, lines 61-65). Miles fails to explicitly teach after the writing the servo information is completed, inspecting the servo information written in a track at a predetermined distance from the track having skew '0', and determining whether the servo information is correctly written. However, Chu discloses such on (fig. 4 and disclosure thereof, and col. 4, lines 62-64).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method as disclosed by Miles with the above teachings from Chu to include inspection means, hence verifying the servo information, therefore avoiding the loss or corruption of data.

RE claim 4, a method to write servo information on a disc in a disc drive, the method comprising sequentially writing servo information from a track of the disc having a least number to a track having skew '0' (abstract, fig. 4, and col. 7, line 48); after writing the servo information to the track having skew '0', moving a head to a track having the largest number (fig. 4, and col. 8, lines 40-45); sequentially writing the servo information from the track having a largest number to a track prior to the track having skew '0' (fig. 4, and col. 8, lines 61-65). Miles fails to explicitly teach after writing all the servo information, inspecting the servo information written in a track at a predetermined distance from the track having skew '0', and determining whether the servo information is correctly written. However, Chu discloses such on (fig. 4 and disclosure thereof, and col. 4, lines 62-64).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method as disclosed by Miles with the above teachings from Chu to include inspection means, hence verifying the servo information, therefore avoiding the loss or corruption of data.

RE claim 11, Miles discloses a disc drive comprising a disc having a surface (or magnetic disk medium, fig. 4, and col. 1, line 15); a spindle motor that rotates the disc (or inherent to have a motor to move the disk radially, and col. 1, line 26); a transducer that writes and reads information in and from the disc (or heads in an arm, col. 15, lines 15-18); a voice coil motor that moves the transducer (or inherently have a motor that would move the transducer in and out of the disk surface, and col. 1, line 26); and a controller that controls the transducer to sequentially write servo information toward a track of the disc having skew '0' from an outer portion of the surface in an outer region of the disc (fig. 4, and col. 8, lines 40-45), sequentially write servo information toward the track having skew '0' from an inner portion of the surface in an inner region of the disc (fig. 4, and col. 8, lines 61-65). Miles fails to explicitly teach after the writing of the servo information is completed, to inspect the servo information written in a track at a predetermined distance from the track having skew '0' and determining whether the servo information is correctly written. However, Chu discloses such on (fig. 4 and disclosure thereof, and col. 4, lines 62-64).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method as disclosed by Miles with the above teachings from Chu to include inspection means, hence verifying the servo information, therefore avoiding the loss or corruption of data.

RE claim 14, the combination of Miles and Chu is relied upon for the same reasons of rejection as stated above. Claim 14 has limitations similar to those treated in the above rejections of claim 4, and is met by the references as discussed above.

RE claim 15, Miles discloses a method to write servo information on a disc drive including a writing head and a disc with tracks, the method comprising defining a skew zero track as the track in which a skew between a tangent to the skew zero track and an axis of the writing head is approximately zero (fig. 2, and disclosure thereof); positioning the writing head at a track at one of an inner portion and an outer portion of the disc and writing servo information; positioning the writing head on a next sequential track toward the skew zero track and writing servo information, until writing servo information on the skew zero track (fig. 4 and disclosure thereof, and col. 8, lines 40-45); positioning the writing head at the remaining of the inner portion and the outer portion of the disc and writing servo information; positioning the writing head on a next sequential track toward the skew zero track and writing servo information, until writing servo information on a track immediately preceding the skew zero track (fig. 4 and disclosure thereof, and col. 8, lines 61-65). Miles fails to explicitly teach inspecting the servo information on a track located a predetermined distance from the skew zero track to determine if a predetermined tolerance of the writing of the servo information was exceeded. However, Chu discloses such on (fig. 4 and disclosure thereof, and col. 4, lines 62-64).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method as disclosed by Miles with the above teachings from Chu to include inspection means, hence verifying the servo information, therefore avoiding the loss or corruption of data.

RE claim 16, Miles discloses a method to write servo information on a disc drive including a writing head and a disc with tracks, the method comprising defining a skew zero track as the track in which a skew between a tangent to the skew zero track and an axis of the

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writing head is approximately zero (fig. 2, and disclosure thereof); writing servo information on sequential tracks in a first radial direction of the disc toward the skew zero track, until servo information is written on the skew zero track (fig. 4 and disclosure thereof, and col. 8, lines 40-45); writing servo information on sequential tracks in a second radial direction of the disc, opposite the first direction, toward the skew zero track, until servo information is written on a track immediately preceding the skew zero track (fig. 4 and disclosure thereof, and col. 8, lines 61-65). Miles fails to explicitly teach inspecting the servo information to determine if a predetermined tolerance of the writing of the servo information was exceeded. However, Chu discloses such on (fig. 4 and disclosure thereof, and col. 4, lines 62-64).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method as disclosed by Miles with the above teachings from Chu to include inspection means, hence verifying the servo information, therefore avoiding the loss or corruption of data.

RE claim 17, the combination of Miles and Chu is relied upon for the same reasons of rejection as stated above. Miles further discloses that the writing of the servo information on the sequential tracks in the first radial direction begins at an outer portion of the disc (fig. 4 and col. 8, lines 40-45); and the writing of the servo information on the sequential tracks in the second radial direction begins at an inner portion of the disc (fig. 4 and col. 8, lines 61-65).

RE claim 18, the combination of Miles and Chu is relied upon for the same reasons of rejection as stated above. Miles further discloses that the writing of the servo information on the sequential tracks in the first radial direction begins at an inner portion of the disc (or controlling transducer for a dual-pass method of writing, fig. 4 and col. 8, lines 40-45); and the writing of the

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servo information on the sequential tracks in the second radial direction begins at an outer portion of the disc (or controlling transducer for a dual-pass method of writing, fig. 4 and col. 8, lines 61-65).

RE claim 23, Miles discloses a disc drive, comprising a reading and writing head (col. 1, lines 16-17); a disc (col. 1, line 26); and a controller, controlling the reading and writing head to write servo information on sequential tracks in a first radial direction of the disc toward a skew zero track until servo information is written on the skew zero track (or controlling transducer for a dual-pass method of writing, fig. 4 and col. 8, lines 40-45); write servo information on sequential tracks in a second radial direction of the disc, opposite the first direction, toward the skew zero track, until servo information is written on a track immediately preceding the skew zero track (or controlling transducer for a dual-pass method of writing, fig. 4 and col. 8, lines 61-65); and wherein the skew zero track is defined as the track in which a skew between a tangent to the skew zero track and an axis of the reading and writing head is approximately zero (fig. 2, and disclosure thereof). Miles fails to explicitly teach inspect the servo information to determine if the predetermined tolerance of the writing of the servo information was exceeded. However, Chu discloses such on (fig. 4 and disclosure thereof, and col. 4, lines 62-64).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method as disclosed by Miles with the above teachings from Chu to include inspection means, hence verifying the servo information, therefore avoiding the loss or corruption of data.

RE claim 26, the combination of Miles and Chu is relied upon for the same reasons of rejection as stated above. Computer readable medium claim 26 is drawn to the computer

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readable medium corresponding to the method of using same as claimed in claim 16. Therefore computer readable medium claim 26 corresponds to method claim 16, and is rejected for the same reasons of obviousness as used above.

Allowable Subject Matter

9. Claims 2-3, 5-6, 12-13, 19-22, 24-25, and 27-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 7-10, and 30 are allowed.

11. The following is an examiner's statement of reasons for allowance:

RE claim 7, the prior art of record, and in particular Chi et al (USPN 5,075,801) fails to teach or suggest a method comprising inspecting the servo information written in the track; if an error occurs in the track, determining whether the number of the track in which the error occurs corresponds to a track at a predetermined distance from a track having skew '0'; if the number of the track in which the error occurs corresponds to the track at the predetermined distance from the track having skew '0', writing the servo information again, and if not, track-defect-processing the track in which the error occurs; and if all tracks have been inspected, track-defect-processing tracks within the predetermined distance from the track having skew '0'.

RE claim 30, the prior art of record, and in particular Chi et al (USPN 5,075,801) fails to teach or suggest a method comprising determining whether an abnormality occurs in servo information written in a track of a disc, at a predetermined distance from a skew zero track; if the abnormality is discovered, rewriting the servo information on the disc; and if the abnormality is

not discovered, track-defect-processing tracks within the predetermined distance from the skew zero track.

12. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents are cited to further show the state of the art with respect to portable storage devices.

- a) Reddy et al (USPN 5,818,654): Discloses managing defects on a sector track.
- b) Wilson (USPN 6,442,715): Discloses defects management method.
- c) Reddy et al (USPN 6,295,176): Discloses identifying defects on a sector track.
- d) Gomez et al (USPN 6,765,744): Discloses a self-servo writing system.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Figueroa whose telephone number is (571) 272-7554. The examiner can normally be reached on Monday - Thursday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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